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Affective Spaces in Urban Transformation's Contexts

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Abstract: According to the contributions coming from different fields of research—from aesthetics to cognitive science—the paper intends to address the topic of urban transformation within the framework of the concept of "affective space", which associates the emotions with all stimuli both internal to the agent and within its environment. The central research question will be: what is the influence of the affective sphere on changes that take place in the city and vice versa how much do these changes affect the emotional sphere? By placing subjects at the center of the research, the paper intends to study the relationship between individuals—as well as groups and communities—and urban spaces they inhabit. This can be done by guaranteeing centrality to the pre-reflective emotional impact that spatial situations produce on subjects, where for "spatial situation" it is intended the inclusive description of a specific condition, including both the material articulation of space and its intangible qualities that influence the subject's emotional sphere.

Key words: Affective space, atmosphere, embodied mind, empathy, memory.

1. Introduction: A New Paradigm

Decades of works in many different disciplines ranging from environmental psychology, human geography, philosophy, cognitive studies, neuroscience, aesthetics—just to name a few—have broken down the dichotomies between mind and body, nature and culture and have produced a new paradigm for the understanding of the subject's experience of the space, in which a wide sphere of emotional resonance becomes important.

There are not a few contributions in this sense from other disciplines and architecture itself has carried out during the 20th century some interesting studies aimed at highlighting how deeply our built habitats influence and condition the very core of our being. We can remember, among others: the book *Experiencing Architecture* (1959) [1] of the Danish architect and urban planner Steen Eiler Rasmussen, who invites us to appreciate architecture as an art that shapes everyday experience; the work of Steven Holl and Juhani Pallasmaa, who following the phenomenological thinking have always emphasized the embodied character of architecture, and the contribution of Harry Francis Mallgrave, whose book *Architecture and Embodiment* (2013) [2] gives voice to the change of paradigm about the relationship between body and cognition, feeling and reasoning, practice and theory. As Mallgrave writes, it is the "dynamic field of relations between mind, body and matter that shapes our precognitive and cognitive understanding of the world" [2, p.13. En. trans. of the Author] and this involves thinking of architecture as a privileged place for our perceptions, feelings and reactions. In this regard, two discoveries are particularly important for architects: the first concerns our greater understanding of emotion, which pre-cognitively informs our reaction to things; the second is related to "mirror neurons" that allow us to simulate or incorporate most of what we learn through the senses, whether we are aware of it or not.

This means understanding the architecture in a multidimensional and emotional way, that is according to precognitive modalities: these will also have to be taken into consideration in the planning process together and beyond the often conceptualizing and abstract cognitive modalities that dominated most of architectural thinking in the second half of the 20th century.

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It is this change of perspective that is taken into account in the present essay, through a historical overview of the most recent developments that have gone through different areas of our knowledge.

2. From Object to Experience: Embodied Mind and Architecture

If the new strains in phenomenology and the recent neuroscience's theories developed since the end of the 20th century have expanded the debate on the close connection between mind and body—that is how we engage the world—the question is not new. We can indeed focus on philosophical research, starting from John Dewey's *Art as Experience* (1934) [3] where it is highlighted the importance of the psychological and emotional factors in the act of perception. The last, for him, was not something obtained by the senses and later processed by mind, but the organism's active engagement with the world, a pre-reflective moment of "heightened vitality" that drives our attention systems and is already impregnated with meaning. Therefore, emotions are embodied within our perceptions and only later we reflect upon our feelings toward some events or sensory fields. This precognitive and pre-reflective interweaving of the subject with the environment in which he moves is fundamental in phenomenological approach, especially, after Edmund Husserl and Martin Heidegger, in the work of Maurice Merleau-Ponty whose book *Phénoménologie de la perception* (1945) as well as the unfinished manuscript published after his death *Le visible et l'invisibe* (1964) have gained renewed interest in philosophical and neuroscientific circles. Merleau-Ponty broke down the distinction between mind and body as well as between body and the surrounding world: perception is for him an embodied event filled with gestures, attitudes and meaning. This denotes that we perceive space not as geometric abstraction but through the experience of a living motile body, which integrates all things and the surrounding environment in an autochthonous significance, whether personal or social. Subject and object, essence and existence, sensible world and intelligible world are mutually implied according to a "chiasm" in which one requires the other. In Merleau-Ponty's words: "So let's say that our body is a two-side being, on the one hand something between things, on the other, what sees and touches them. [...] It teaches us that one requires the other" [4, p. 153. En. trans of the Author].

Particularly influential for understanding affective spaces is the thought of the psychologist James Gibson who pointed out the interwoven nature of perception in *The Senses Considered as Perceptual Systems* (1966) and developed *The Theory of Affordances* in a homonymous essay (1977) and in the later book *The Ecological Approach to Visual Perception* (1979) in which he stated how the new conied term *affordance* implies the complementarity of the organism and the environment: "I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementary of the animal and the environment" [5, p. 127]. The key for understanding the concept of *affordance* is that it is relational and characterizes the suitability of the environment to the observers or actors. Thus "the affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill" [5, p. 127]. So, the *affordance* is not a property of the experience of the subject but rather of his action's capabilities. In this way, *affordances* can cross the subjective/objective barrier. As Joanna McGrenere and Wayne Ho notice, "They are objective in that their existence does not depend on value, meaning, or interpretation. Yet they are subjective in that an actor is needed as a frame of reference" [6]. In summary, as M. L. Johnson writes in *The Embodied Meaning of Architecture* [7, pp. 33-50], "the affordances define the types of couplings and transformative operations we can experience".

The theory of *affordances* introduces, therefore, a "value-rich ecological object": *affordances* cannot be described within the "value-neutral language of

physics", but rather capture beneficial or harmful aspects of objects and relate them to the individual for whom they are well or ill suited. Starting from Gibson's analysis, cognitive neuroscientists developed the concept of "action-oriented perception" which operates on the hypothesis that the individual can characterize perceptual systems not as ends in themselves but through their ongoing courses of action or potential actions. This means to emphasize, in our disciplinary field, how the central role of design lies not so much in the built structure as in the experience or activities that take place inside the building or built environment. Such a perspective is not new to architectural thinking—just consider the works, among others, of Alvar Aalto, Aldo van Eyck or Herman Hertzberger, as well as all the architectures that pursue a phenomenological approach, as we noted earlier—and above all it is not new in the artistic research of the 20th century. Artists like Josef Albers, Barnett Newman or Mark Rothko, as well as land artists (not to mention all the performative art), have always emphasized the importance of the observer/user experience rather than the construction rules of the work itself. In the words of Albers, who has developed a specific terminology, there is an iconic difference between "factual fact" and "actual fact". As pointed out by Gernot Böhme, the first one is "the physical reality of the image, it is the image as an object and the objective properties that we can find there, including the colors"; the second one "is what the image radiates, the chromatic and affective tonality assumed by space", it is the "actual reality of the image" [8, p. 57. En. trans. of the Author].

By putting in place the centrality of the dynamic work-user/viewer relationship, art anticipates the centrality of organism-environment circle previously recalled, increasingly evident in the recent developments of cognitive studies and neuroscience. In this field a real milestone is the text *The Embodied Mind* (1991) [9] carried out by Francisco Varela, Evan Thompson and Eleanor Rosh (in order a biologist, philosopher and psychologist) in which the term "enactivism" appears to indicate the global loop of organism and environment: the organism both shapes the environmental field and at the same time is continually being shaped by it. Along with this, another key point in their study is the importance of embodied sensorimotor activity, through which we have a sensory awareness of our bodies and move ourselves. At this regard they highlight two points that are very important for our discipline: "first, that cognition depends upon the kinds of experience that come from having a body with various sensorimotor capacities, and second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological and cultural context" [9, p. 173]. This means that our nervous system, body and environment are intertwined and highly structured dynamic systems, as Thompson and Varela pointed out in *Radical Embodiment. Neural Dynamics and Consciousness* (2001) [10].

Coming back to the term "enactivism", a deeper understanding is developed by Thompson in his book *Mind in Life* (2007) [11] in which he highlights the cultural implications of his enactive model, exploring the ramification of the new perspective with regard to human emotion, empathy and culture. In Thompson's view, emotion is not a response or a reflex of an organism to a stimulus, but an endogenous activity at the front end of experience: "sensorimotor processes modulate, but do not determine, an ongoing endogenous activity, which in turn infuses sensorimotor activity with emotional meaning and value for the organism" [11, p. 370]. In this way emotion not only involves traditional dimensions (such as arousal, bodily expression, attention, mood) but also cognitive dimensions (perception, evaluation, memory, planning and decision-making) highlighting its centrality in the experience of architecture. "Cognitive and emotional processes—Thompson writes—modify each other continuously on a fast time-scale, while simultaneously being constrained by the global form

produced by their coupling in a process of circular causality. This emergent form, the emotional interpretation, is a global state of emotional-cognitive coherence comprising an appraisal of a situation, an affective tone and an action plan" [11, p. 371]. Also empathy is central in Thompson's investigation, which frames it inside the theme of *enculturation*, used to describe the emerging of human mental activity from developmental culture and social processes. Conceiving empathy as the emotional means through which the organism projects itself toward and engages with the sociocultural environment, he states that empathy moves along two directions: the first one underlines our intersubjective experience with others, that is how the "self and other enact each other reciprocally through empathy" [11, p. 382]; the second one invests empathy with another meaning, which takes account of culture, history and the life-world. This is the process of *enculturation* inside which human mentality emerges and "is configured by the distributed cognitive web of symbolic culture" [11, p. 383]. This means that culture is not an external force acting on our genes, but something "woven into the very fabric of each human mind from the beginning" [11, p. 403], a part of a larger environment that simultaneously shapes the cognitive evolution of development systems.

With the discovery of mirror neurons or (for humans) mirror systems in the early 1990s the idea of empathy becomes a pivotal concept both in individuals and sociocultural emotional mechanisms to stress the neurological processes through which we relate emotionally to objects, as well as to other human beings. Giacomo Rizzolatti [12], the lead scientist in the discover of mirror neurons together with Leonardo Fogassi and Vittorio Gallese at University of Parma (Italy), has spoken of mirror systems in terms related to Gibson's *affordance*. How this, in the latter's ecological psychology, is the way we perceive or connect with the world, so the mirror mechanism maps action perception and execution in the human brain. As Gallese and Alessandro Gattara write in *Embodied Simulation, Aesthetics, and Architecture: an Experimental Aesthetic Approach* [7, pp. 161-179] "mirror neurons – motor neurons activated during the execution of an action and its observations performed by someone else – map the action of others on the observer's mirror representation of the same action". "The cortical motor system is […] an integral part of our cognitive systems, because its neurofunctional architecture structures not only action execution but also action perception, imitation, and imagination" and, in the latter, action is not produced but only simulated. In such a way, the "primordial quality turning space, objects, and behavior into intentional objects is their constitution as objects of the motor intentionality that our body's motor potentialities express" [7, p. 165]. In the same way, we directly apprehend the emotions and sensations of others, sharing representation bodily format.

Concepts as embodied simulation and sensorimotor activities have become increasingly important in perception of built environment, although little research has been devoted specifically to architecture.

Leaving aside some architectural studies developed in the 20th century before the new discoveries of neuroscience (among others, we can recall the situationist psycho-geography, the urban analysis of Kevin Lynch or the sociological patterns of Christopher Alexander), it is very interesting to mention here a special issue of the magazine "Architecture and Urbanism" (1994), whose title was *Questions of Perception. Phenomenology of Architecture* [13] in which Alberto Perez Gomez, Juhani Pallasmaa e Steven Holl emphasized the centrality of perception in the architectural project, according to a "line of resistance" with respect to post-modernist, deconstructivist, blobbist, formalist, functionalist or high-tech researches developed in the second half of the twentieth century. As Perez-Gomez stated in his essay *The Space of Architecture. Meaning as Presence and Representation* [13, pp. 7-26], "the

meaning of the work lies in the fact that it is there. [...] It is, first and foremost, of the world and our experience of it overwhelms us. Rather than simply meaning something, art and architecture allow meaning to present itself. [...] Thus art and architecture [...] present something that can exist only in specific embodiments". Although rooted in the language as a cultural form of representation, the meaning of the work goes further: for Perez-Gomez the space of architecture is like the platonic idea of "chora", the space of the action, the space that lies between the being (the substances) and the becoming (the phenomena).

Also, for Holl in his writing *Questions of Perception. Phenomenology of Architecture* [13, pp. 39-118] "the challenge for architecture is [...] to heighten phenomenal experience while simultaneously expressing meaning" that is "stimulate both inner and outer perception". Recalling Merleau-Ponty, with its phenomenological conception of the body as a living and dynamic structure of the subject, Holl defines architecture in many different ways, always related to body-subject's experience of the space: "The body—he writes—incorporates and describes the world. Motility and body-subject are the instruments for measuring architectural space" [14, p. 38]. So the "criss-crossing of the body through the space [like in the Helsinki Museum of Contemporary Art, "Kiasma"] joins space, body, eye, and mind" [14, p. 38]. This immersion of the subject who, through its movements, allows the space to emerge, develops an "enmeshed experience", that is an "intangible condition" in which "individual elements begin to lose their clarity" [14, p.56]. As we see later, this "in-between reality" is similar to what different authors have defined as *atmosphere*: "the shared reality—in Gernot Böhme's words—of the perceiver and the perceived" [15, p. 23] that suggests a "new aesthetics" as "a general theory of perception".

In Pallasmaa's words, who underlines in his essay *An Architecture of the Seven Senses* [14, pp. 27-38] the complexity and plasticity of our nervous system, "the timeless task of architecture is to create embodied existential metaphors that concretize and structure man's being in the world". As he has stressed several times [16, 17]—he too starting from Merleau-Ponty's concept of the body at the center of perception and experience, as well as Gaston Bachelard's concept of the "polyphony of the senses", with an increasing interest toward cognitive science in combination with the philosophical framework—"an architectural work is [experienced] in its fully embodied material and spiritual presence", because "architectural space is lived space rather than physical space, and lived space always transcends geometry and measurability" [16, pp 44, 64]. In the encounter between an architecture and a subject, the world and perceiver become merged and the boundaries between outer and inner mental worlds turn vague. As highlighted in recent studies on "embodied mind" as well as in "new aesthetics" researches, this means recognizing that body generates meaning even before self-consciousness has fully developed.

The last generation of embodiment accepts the assumption that the structure of the body, through which we interact with the world, influences the formation of the categories we use in the perception of the environment itself. Hence the importance, for example, of the *conceptual metaphors* according to the words of George Lakoff and Mark L. Johnson [18] which establish a projective correspondence between the emotional and the spatial dimensions (for example, I feel up/down), so underlining that they are *embodied metaphors* that give life to an imaginative process comprising our motor system in a pre-reflective way. As Johnson states: "Meaning, according to the embodied simulation hypothesis, is not just abstract mental symbols; it is a creative process, in which people construct virtual experiences—embodied simulations—in their brains". In such a way, "the meaning and power of architectural affordances in our lives requires these multimodal, enactive, simulation process of meaning-making" [7, pp. 37-38], involving the neural simulation of sensory, motor and affective

process in a whole way that is the focal point of our experience of the world.

3. Memory and Atmosphere in Changing Urban Contexts

What has been said so far brings to the foreground the importance of emotions as a complex manifestation (involuntary and voluntary, natural and cultural) of our inner states, which highlights how the emotional experience is rooted in our biological sphere and linked to our cultural systems and, particularly important in urban transformation's contexts, linked to the question of remembering and memory. Pivotal concept in late 20th century urban theory, from Aldo Rossi's classical book *L'architettura della città* (1966) [19] onward, the discussion has nevertheless concerned historicized acceptations of memory, while less attention has been paid to any "social or historical qualities that made the spatialities of social life important subjects for study in themselves" [20, p. 169]. As Edward W. Soja points out, "in the mainstreams of historical materialism and in the evolution of Western social theory" the "city and the specificities of urban life have been [too often] conceptualized as mere background or container for the dynamics of human and societal development" with the tendency to abstract "from the particularities of specific times and places" [20, p. 169]. On the contrary, actual awareness of close correlation between mind and body, between emotional sphere and built environment opens up to a new way of thinking about space across all disciplines and disciplinarities, in which spatiality, historicality and sociality embrace dimensions of human life. This is, as Soja states, the *Thirdspace,* where "Everything comes together": "subjectivity and objectivity, the abstract and the concrete, the real and the imagined, […] mind and body, consciousness and the unconscious, […] everyday life and unending history" [20, pp. 56-57]. By recalling both the "heterotopologies" of Michel Foucault and the critical strategy of Henri Lefebvre's "trialectics of spatiality"—that is the spatiality perceived, conceived and lived—to disrupt and begin to reconstitute the conventional binary opposition, Soja's *Thirdspace* as "thirding-as-Othering" guides us towards a "lived space of radical openness and unlimited scope, where all histories and geographies, all times and places, are immanently presented and represented" [20, p. 311].

Between everyday life, urban reality and social space, different crossings and interconnections emerge, which can help us to develop a theory or better multiple theories of remembering, corresponding to the multiple kinds of memory [21], starting from the relationship between *internal memory* and *external memory*, the latter which tends to be designed to provide highly stable storage in a way that may play a vital role in remembering. In addition to the increasing literature on the ways in which technological tools contribute to remembering (particularly when it is internet-connected), a large and dynamic literature is studying *collective memory* in small as well as in large scale groups, where concepts such as "consolidation" (referring to the process through which unstable, short-term memory representations are transformed into stable, long-term memory representations) can become very important in our discipline, especially when referring to changes or emergencies in existing urban settings. Here, moreover, the question of relationship between traces, the representations produced by retrieval and the representations involved in perceptual experiences becomes evident, opening up a field of research that would highlight the idea that the spatial externalization of emotions can be embedded into physical space. Thus it is possible to study, for instance, the changing urban spaces at the present and in their historical perspective: residents who have witnessed the urban transformation and recent inhabitants who may witness the presence of historicized feelings through their traces: not only physical traces, but also "simulated" traces—we can say—which emerge from representations of past events that could have been directly narrated or stored in some

external archives. How this intangible memory can produce vivid representations in the perceptual experience is a complex matter, which in our opinion would still be pursued. What ultimately matters here is the relationship between the contents of perceptual representations and the contents of retrieved, recaptured or reactived representations, well knowing that every representation, such as memory, changes with us. In general, in fact, as Kourken Michaelian and John Sutton write with reference to the work of Daniel Schacter and Donna Rose Addis concerning *The Cognitive Neuroscience of Constructive Memory* [22], "remembering is not a reproductive but a reconstructive process, in which components of previous experiences are extracted and recombined in a flexible manner, often resulting in representations that include content not included in the corresponding experience" [21, 22].

All the contributions discussed above confirm how much the built environment and its representations influence the user's experience of it: "our emotional responses—as Mallgrave noted in "*Know Thyself": or What Designers Can Learn from the Contemporary Biological Sciences* [7, pp. 9-31]—are strongly integrated with our peripheral autonomic nervous system" which means that our perception of architecture is manifested as an embodied and mirror-circuit activity. If architectural theory a few decades ago considered first architecture as a visual art communicating its content through symbols, now it's evident that empathy and embodied simulation are central in our feeling and understanding of it. "The idea of embodiment is no longer a philosophical abstraction; it is a biological reality now vividly captured by current technologies and our new humanistic models" [2, p. 113. En. trans. of the Author]. Therefore, on the one hand, emotions are deeply rooted from the beginning in every architectural experience and take place in a precognitive or non-conscious way; on the other, mirror neurons allow us to mentally simulate and incorporate most of what we learn through the senses and this happens prior to any acts of reflection or symbolic interpretation. What this means is that "awareness and thought are fundamentally embodied" and, "in the words of Lakoff and Johnson, that human concepts are not just reflections of external reality, but they are crucially shaped by our bodies and brains, especially by our sensorimotor system" [7, p.20]. Thus architectural design would be more than the process of "form-making": it would be rather a projection of an immersive space plastic and dynamic in its perception. It's plastic because our personal space can be modified through tools and cultural conditioning; it's dynamic because it can be modified by the built environment as well as by changes in the social and emotional disposition of the perceiving individual.

In this context another concept arises to capture the interwoven and ongoing relationship between emotion and cognition, between mind and body, that one of *atmosphere* which generally conceived as a "semi-thing" has become one of the most important concept in recent design theory. Adopted by Hermann Schmitz, the founder of the *New Phenomenology*, to indicate "the acting, spatial externalization of feelings" [23, 24] starting from the "vital drive" of expansion and contraction of "felt body" (by which Schmitz intends the feeling body), the *atmosphere* is defined by Gernot Böhme's new aesthetics [8, 15, 25] as "an indeterminate spatially extended quality of feeling": "the primary perceptive reality from which, only, one has the differentiation of subject and object", so that the *atmospheres* can be defined as "something between subject and object. They are not something relational, but the place of the relationship in itself [8, pp. 93, 95. En trans. of the Author].

In this way, aesthetics returns to be "what its name suggests, a general theory of perception" in which atmospheres represent the "primary object of perception […] in front of which, by an analytical way of seeing, something like objects, forms, and colors, are then distinguished" [15, pp. 34-35].

Also, in Tonino Griffero's books [26, 27] the

atmospheres are the fulcrum of bodily communication between man and the world prior to any divisions and abstractions: they are therefore spatializing feelings which are the emotional quality of a "lived space", an extradimensional space linked to the body itself and to our actions. Together with the concept of *ambiance* preferred by some authors, such as Jean Paul Thibaud, for its more emphasis—with respect to the notion of *atmosphere*—on "the situated, the built and the social dimensions of sensory experience" [28, p. 40], these concepts lead us towards particular attention to the lived or perceived effectiveness of reality, to the point that the "lived" becomes the privileged place for understanding man and his-being-in-the-world.

So if "*Aisthesis* means [again] the sensuous-affective attendance to things" [15, p. 57] *atmospheres* become "the subject matter of architecture", as Böhme writes, because "we need to ask whether it is really seeing that leads to a genuine perception of architecture, or whether it is much rather feeling", that is "the space of bodily presence […] initially nothing more than a perceptible indeterminate expanse, out of which diverse spaces can emerge through articulation. Orientations, movement, impressions and markings are such forms of articulation. They create spatial concentrations, directions and constellations" [15, pp. 72, 75]. Using form, physical constellations, social and cultural entreaties, but also "non-thing-like or non-corporal generators of atmospheres, such as in particular light and sound", architects modulate "mindful physical space by creating confines or expanse, direction, delimiting or transgressive atmospheres" [29, p. 27]. This means, as Peter Zumthor writes in his book *Atmospheres* (2006) [30], "how a building [such as an urban space or a landscape] manages to move me". *Atmosphere* also extends beyond the limits of built forms and includes the "things themselves, the people, the air, noises, sounds, colours, material presences, textures, form too—forms I can appreciate" [30, p. 17]. In summery—as Böhme writes—if "traditional architecture has conceived the space from the perspective of geometry and considered the people in it as bodies", what matters today "is to strengthen the position of the experiencing subject and to foreground what it means to be bodily present in space" [15, p. 95].

4. Some Considerations as Conclusion

The importance of all these concepts, which refer to what we could define as a phenomenological rediscovery of "what gives life to an environment, what confers upon it a value of attachment" [28, p. 41] as Thibaud states, appears even more meaningful when we operate in changing urban contexts, especially when traumatic transformations are in progress or are considered as necessary. This is the case, for example, of the de-industrialized areas in the city of Turin, Italy, in its dramatic transition from a fordist city to a post-fordist city. As clarified by the figures, in some cases, these areas have been already regenerated with the developing of new urban settlement (Fig. 1); in others, the areas are undergoing revitalization or are waiting for urban transformations (Fig. 2). It is above all in these last cases that the consideration of emotional sphere becomes important, as a tool for designing space and future use. Emotions can deeply "alter the way the world is for us" [31] so that the challenge should be to design in a more integrated way, taking into account the feelings spatialized in built environment: a design not only entrusted to the functionality of "effective" space, but also to atmosphere, empathy, imagery, memory of "affective" space.

Fig. 1 Skeleton of the "Stripping Building"—Ex Fiat Ferriere, Area of Spina 3, Turin (October 2017).
Photos of Federica Joe Gardella, *(Re)generation. Let's get back into play under the wing of history*.
Prof. Paola Gregory, Michela Comba: Atelier Composizione e Storia, Politecnico di Torino, A.A. 2017-18.

Fig. 2 Skeleton of the Officine Grandi Motori, Fiat, Turin (October 2017).
Photos of Paola Gregory, *Loneliness*.

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